

## CURRICULUM VITAE

Name: Alessandro Sette  
Place and date of birth: Rome, Italy; August 11, 1960  
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### Education:

1974 - 1979 Humanistic studies at Liceo Classico "T. Tasso" in Rome. Final grade: 60/60.  
1979 - 1983 Enrolled in the Department of Biological Sciences of the University of Rome. Average grade: 29.5/30.  
February 1984 FEBS Winter School in "Biochemistry of Aging" in Maria Alm (Austria).  
March 1984 Advanced course on "Combinatorial Logic and Computer Programming" in the Department of Mathematical Sciences at the University of Rome.  
July 1984 Graduated in Biological Sciences (maximum cum laude) with an experimental thesis, realized under the supervision of Prof. G. Doria, on "Age-related changes in radiosensitivity of the immune system."  
September 1984 FEBS-NATO-EMBO Summer School on "Genome Organization and Function" in Spetsai (Greece).  
February 1992 Liquid Chromatography Course (Beckman), Tucson, Arizona.  
June 1992 Tandem Mass Spectrometry Course given by D. Hunt, University of Virginia, Charlottesville, Virginia.  
July 1994 Graduated from 6-month intensive program on Leadership and Management (LAMP) at the University of California San Diego (UCSD)  
Spring 2001 Courses on Bioinformatics and Biological Databases at the San Diego Supercomputer Center (UCSD)

### Working Experience:

*Laboratory of Pathology, C.R.E. Casaccia, Rome.*

Predoctoral Fellow (Supervisor, Gino Doria), 1983 - 1984.

Postdoctoral Fellow (Supervisor, Luciano Adorini), 1984 - 1985.

*National Jewish Center for Immunology and Respiratory Medicine, Denver, Colorado.*

Postdoctoral Fellow (Supervisor, Howard Grey), 1986 - 1988.

*Laboratory of Pathology of E.N.E.A., Casaccia, Rome.*

Biotechnology Consultant in Computer Science, 1986 - 1988.

**Exhibit A**

*Research Institute of Scripps Clinic and Research Foundation, La Jolla, California.*

Adjunct Member, Department of Immunology, 1988 -

*Cytel Corporation, San Diego, California.*

Staff Scientist, 1988 - 1989.

Senior Staff Scientist, 1989 - 1990.

Project Leader of the Autoimmunity Program. This joint program in collaboration with Sandoz Ltd., 1989 - 1992.

Supervisor of Cytel MHC binding assays laboratory, 1989 - 1997.

Associate Director of Immunochemistry, 1990 - 1993.

Member of the Project Team, "Effect of Glycosylation on Peptides' Immunogenicity", 1990 - 1991.

Project Leader of the Food Allergy Program, 1990 - 1991.

Member of the Management Committee, 1992 - 1993.

Director of Immunochemistry, 1993 - 1994.

Project Leader of the Human Papillomavirus Project, 1993 - 1994.

Director of Immunology, 1994 - 1997.

Project Leader of the Fungal Disease Program, in collaboration with Takara Shuzo Co. Ltd., Japan, 1994 - 1997

Member of the Management Committee, 1995 - 1997.

Project Leader of the Technology Development Project, 1995 - 1997.

*Epimmune Inc., San Diego, California.*

Vice President, Chief Scientific Officer, 1997 -

#### Issued U.S. Patents and Inventions:

- Method for Identifying Useful Polypeptide Vaccines. U. S. Patent No. 5,200,320, issued April 6, 1993.
- Induction of Anti-Tumor Cytotoxic T Lymphocytes in Humans Using Synthetic Peptide Epitopes. U.S. Patent No. 5,662,907, issued September 2, 1997.
- Immunosuppressant Peptides. U. S. Patent No. 5,679,640, issued October 21, 1997.
- Alteration of Immune Response Using PAN DR-Binding Peptides. U.S. Patent No. 5,736,142, issued April 7, 1998.
- DNA Encoding Mage-1 C Terminal Cytotoxic T Lymphocyte Immunogenic Peptides. U.S. Patent No. 5,750,395, issued May 12, 1998.
- Methods for making HLA Binding Peptides and Their Uses. U.S. Patent No. 6,037,135, issued March 14, 2000.
- Oncogene Fusion Protein Peptide Vaccines. U.S. Patent No. 6,156,316, issued December 5, 2000.

#### Editorial Responsibilities:

Ad Hoc reviewer for Nature, Science, Cell, Immunity, Journal of Experimental Medicine, Proceedings of the National Academy of Sciences, Cancer Research, Journal of Clinical Investigation, Journal of Immunological Methods, International Immunology, Autoimmunity, Immunology Today, Biochimica and Biophysica Acta, J.of Virol, and Hepatology.

1992 - 1998	Associate Editor, The Journal of Immunology
1993 -	Peer Review Consultant, National Institutes of Health and National Cancer Institute.
1994 - 1997	Member, Arthritis Foundation Study Section, Cellular Immunology

- 1996 Ad Hoc Consultant for National Science Foundation, European Science Institute, Istituto Superiore di Sanita', Wellcome Trust, ITN and other funding agencies
- 1998 - 1999 Member, HIV Vaccines Study Session, National Institutes of Health
- 1998 - 1999 Editorial Board Member: Human Immunology, Current Pharmaceutical Biotechnology; Current Drugs, Tissue Antigens.

#### Memberships and Society Affiliations:

Gruppo di Cooperazione in Immunologia, Societa' Italiana di Biometria, Societa' Italiana di Biochimica, American Association of Immunologists, American Association of Microbiologists, American Society for Microbiology, American Chemical Society, The Protein Society, N. Y. Academy of Science, and American Association for Cancer Research

#### Honors and Awards:

- 1990 51st Oregon State University Biological Colloquium Award
- 1994 - 1995 Co-Investigator. Molecular Events in Antigen Recognition, National Institutes of Health grant (H. M. Grey, P.I.).
- 1994 - 1996 SubProject P.I. Isolation and Characterization of MHC-Bound Self-Peptides in Autoimmune Disease, National Institutes of Health grant (K.S.K. Tung, P.I.).
- 1994 - 1999 Principal Investigator. A General Strategy for Identification of Broadly Reactive HLA Restricted T Cell Epitopes, NIAID Contract No. NOAI45241.
- 1995 Member of A. Geluk Ph.D. thesis graduating committee, University of Leiden, The Netherlands.
- 1995 American Association of Immunologists Investigator Award.
- 1995 - 1998 Co-Investigator. Development of Peptide-based Immunotherapeutic for AIDS, National Institutes of Health, National Institute of Allergy and Infectious Diseases, SPIRAT Grant. Contract No. U19 AI38584-01/05.
- 1996 - 1997 Principal Investigator. Vaccine Approaches to Treatment of Hepatitis C Infection, National Institutes of Health, SBIR Grant (Phase I). Contract No. 1R 43 AI38620-01
- 1996 - 1997 Co-Investigator. Peptide Based Vaccine for Primate Model of AIDS, National Institutes of Health, National Institute of Allergy and Infectious Diseases, SIV Grant (Phase I). Contract No. 1R 43 AI38081-01.
- 1997 - 1998 Co-Investigator. Processing & Presentation of Lipopeptides and Minigenes, National Institutes of Health, National Institute of Allergy and Infectious Diseases, HIV Grant. Contract No. 1 R21 AI42699-01.
- 1997 - 1999 Principal Investigator. A Peptide Vaccine for Breast Cancer Prevention, University of California, Breast Cancer Research Program. Contract No. 1RB-0302.
- 1998 - 1999 Co-Investigator. Peptide Based Vaccine for Primate Model of AIDS, National Institutes of Health, National Institute of Allergy and Infectious Diseases, SIV Grant (Phase II). Contract No. 2R 44 AI38081-02.
- 1998 - Member of the Kriegler Lecture and Award Selection Committee
- 1998 - 2000 Principal Investigator. Vaccine Approaches to Treatment of Hepatitis C Infection, National Institutes of Health, SBIR Grant (Phase II). Contract No. 2R 44 AI38620-03.
- 1999 - 2004 Principal Investigator. Application of Data on HLA and CD1 to the Improvement of Vaccines, National Institutes of Health, Contract No. N01-AI-95362.
- 2000 - 2005 Co-Investigator. MHC-Bound, SIV-Derived CTL and Epitopes. National Institutes of Health. Grant # R24 RR 15371.

2000-2004	Co-Investigator. Epitope-Based DNA Vaccines for AIDS Therapy. National Institutes of Health. Grant # PO1-AI-48238 (IPCP).
2001	American Liver Foundation Award for Biotechnology Companies
2002	ISI highly cited investigator (top 200 in the Immunology category over the 1981-2000 period, with over 11,000 Citation Index citations).

## PUBLICATIONS

### Papers in Scientific Journals:

1. Colizzi, V., Palmieri, G., Sette, A., Appella, E., Doria, G., and Adorini, L. Synthetic peptides in the analysis of the induction and regulation of delayed-type hyper-sensitivity to lysozyme. *Folia Biol. (Praha)* 31:396-401, 1985.
2. Adorini, L., Palmieri, G., Sette, A., Appella, E., and Doria, G. Expression of T-cell receptor by a mouse monoclonal antigen-specific suppressor T-cell line. *Curr. Top. Microbiol. Immunol.* 126:53-61, 1986.
3. Sette, A., Adorini, L., Marubini, E., and Doria, G. A microcomputer program for probit analysis of interleukin-2 (IL-2) titration data. *J Immunol Methods* Feb.; 86(2):265-277, 1986
4. Sette, A., Colizzi, V., Appella, E., Doria, G., and Adorini, L. Analysis of lysozyme-specific immune responses by synthetic peptides. I. Characterization of antibody and T cell-mediated responses to the N-terminal peptide of hen egg-white lysozyme. *Eur J Immunol* 16:1-6, 1986.
5. Sette, A., Doria, G., and Adorini, L. A microcomputer program for hydrophilicity and amphipathicity analysis of protein antigens. *Mol. Immunol.* 23:807-810, 1986.
6. Buus, S., Sette, A., Colon, S. M., Jenis, D. M., and Grey, H. M. Isolation and characterization of antigen-Ia complexes involved in T cell recognition. *Cell* 47:1071-77, 1986.
7. Guillet, J.-G., Lai, M.-Z., Briner, T. J., Buus, S., Sette, A., Grey, H. M., Smith, J. A., and Geffer, M. L. Immunological self, nonself discrimination. *Science* 235:865-870, 1987.
8. Buus, S., Sette, A., Colon, S. M., Miles, C., and Grey, H. M. The relation between major histocompatibility complex (MHC) restriction and the capacity of Ia to bind immunogenic peptides. *Science* 235:1353-58, 1987.
9. Sette, A., Buus, S., Colon, S., Smith, J. A., Miles, C., and Grey, H. M. Structural characteristics of an antigen required for its interaction with Ia and recognition by T cells. *Nature* 328:395-9, 1987.
10. Sette, A., Buus, S., Colon, S., Miles, C., and Grey, H. M. I-A<sup>d</sup>-binding peptides derived from unrelated protein antigens share a common structural motif. *J Immunol* 141:45-48, 1988.
11. Adorini, L., Sette, A., Buus, S., Grey, H. M., Darsley, M., Lehmann, P. V., Doria, G., Nagy, Z. A., and Appella, E. Interaction of an immunodominant epitope with Ia molecules in T-cell activation. *Proc Natl Acad Sci USA* 85:5181-85, 1988.
12. Sette, A., Adorini, L., Mancini, C., Marubini, E., and Doria, G. Computerized data analysis in cellular immunology. Enhancement and suppression of immune responses. *J Immunol Methods* 112:91-98, 1988.
13. Buus, S., Sette, A., Colon, S. M., and Grey, H. M. Autologous peptides constitutively occupy the antigen binding site on Ia. *Science* 242:1045-47, 1988.
14. Sette, A., Doria, G., and Adorini, L. A basic library of microcomputer programs to obtain immunologically relevant information from protein sequences. *Int J Biomed Comput* 22:165-181, 1988.
15. Sette, A., Buus, S., Colon, S., Miles, C., and Grey, H. M. Structural analysis of peptides capable of binding to more than one Ia antigen. *J Immunol* 142:35-40, 1989.
16. Sette, A., Buus, S., Appella, E., Smith, J. A., Chesnut, R., Miles, C., Colon, S. M., and Grey, H. M. Prediction of major histocompatibility complex binding regions of protein antigens by sequence pattern analysis. *Proc Natl Acad Sci USA*, 86:3296-3300, 1989.

17. Schaeffer, E. B., Sette, A., Johnson, D. L., Bekoff, M. C., Smith, J. A., Grey, H. M., and Buus, S. Relative contribution of "determinant selection" and "holes in the T-cell repertoire" to T-cell responses. *Proc Natl Acad Sci USA*, 86:4649-53, 1989.
18. Sette, A., Adorini, L., Colon, S. M., Buus, S., and Grey, H. M. Capacity of intact proteins to bind to MHC class II molecules. *J Immunol* 143:1265-67, 1989.
19. Sette, A., Lamont, A., Buus, S., Colon, S. M., Miles, C., and Grey, H. M. Effect of conformational propensity of peptide antigens in their interaction with MHC class II molecules. Failure to document the importance of regular secondary structures. *J Immunol* 143:1268-73, 1989.
20. Sette, A., Adorini, L., Mancini, C., and Doria, G. A BASIC microcomputer program for data analysis of limiting dilution assays. *Comput Appl Biosci* 5:161, 1989.
21. Sette, A., Adorini, L., Appella, E., Colon, S. M., Miles, C., Tanaka, S., Ehrhardt, C., Doria, G., Nagy, Z. A., Buus, S., and Grey, H. M. Structural requirements for the interaction between peptide antigens and I-E<sup>d</sup> molecules. *J Immunol* 143:3289-94, 1989.
22. Demotz, S., Grey, H. M., Appella, E., and Sette, A. Characterization of a naturally processed MHC class II-restricted T cell determinant of hen egg lysozyme. *Nature* 342:682-684, 1989.
23. Sette, A., Adorini, L., Mancini, C., and Doria, G. An Apple IIE microcomputer program for multiple non-independent comparisons by the Scheffe's test. *Comput Biol Med* 19:403-7, 1989.
24. Lamont, A. G., Powell, M. F., Colón, S. M., Miles, C., Grey, H. M., and Sette, A. The use of peptide analogs with improved stability and MHC binding capacity to inhibit antigen presentation *in vitro* and *in vivo*. *J Immunol* 144:2493-98, 1990.
25. Demotz, S., Grey, H. M., and Sette, A. The minimal number of class II MHC-antigen complexes needed for T cell activation. *Science* 249:1028-30, 1990.
26. Lamont, A. G., Sette, A., Fujinami, R., Colón, S. M., Miles, C., and Grey, H. M. Inhibition of experimental autoimmune encephalomyelitis induction in SJL/J mice by using a peptide with high affinity for IA<sup>s</sup> molecules. *J Immunol* 145:1687-93, 1990.
27. O'Sullivan, D., Sidney, J., Appella, E., Walker, L., Phillips, L., Colón, S. M., Miles, C., Chesnut, R. W., and Sette, A. Characterization of the specificity of peptide binding to four DR haplotypes. *J Immunol* 145:1799-1808, 1990.
28. Sette, A., Sidney, J., Albertson, M., Miles, C., Colón, S. M., Pedrazzini, T., Lamont, A. G., and Grey, H. M. A novel approach to the generation of high affinity class II-binding peptides. *J Immunol* 145:1809-13, 1990.
29. Grammer, S. F., Sette, A., Colón, S., Walker, L., and Chesnut, R. Identification of an HSV-1/HSV-2 cross-reactive T cell determinant. *J Immunol* 145:2249-2253, 1990.
30. Teyton, L., O'Sullivan, D., Dickson, P. W., Lotteau, V., Sette, A., Fink, P., and Peterson, P. A. Invariant chain distinguishes between the exogenous and endogenous antigen presentation pathways. *Nature* 348:39-44, 1990.
31. O'Sullivan, D., Sidney, J., del Guercio, M-F., Colón, S. M., and Sette, A. Truncation analysis of several DR binding epitopes. *J Immunol* 146:1240-46, 1991.
32. Krieger, J. I., Karr, R. W., Grey, H. M., Yu, W-Y., O'Sullivan, D., Batovsky, L., Zheng, Z-L., Colón, S. M., Gaeta, F. C. A., Sidney, J., Albertson, M., del Guercio, M-F., Chesnut, R. W., and Sette, A. Single amino acid changes in DR and antigen define residues critical for peptide-MHC binding and T cell recognition. *J Immunol* 146:2331-40, 1991.
33. Pedrazzini, T., Sette, A., Albertson, M., and Grey, H. M. Free ligand-induced dissociation of MHC-antigen complexes. *J Immunol* 146:3496-3501, 1991.
34. Panina-Bordignon, P., Corradin, G., Roosnek, E., Sette, A., and Lanzavecchia, A. Recognition by class II alloreactive T cells of processed determinants from human serum proteins. *Science* 252:1548-50, 1991.

35. Leighton, J., Sette, A., Sidney, J., Appella, E., Ehrhardt, C., Fuchs, S., and Adorini, L. Comparison of structural requirements for interaction of the same peptide with I-E<sup>k</sup> and I-E<sup>d</sup> molecules in the activation of MHC class II-restricted T cells. *J Immunol* 147:198-204, 1991.
36. Roudier, J., Sette, A., Lamont, A., Albani, S., Karras, J.G., and Carson, D.A. Tolerance to a self peptide from the third hypervariable region of the E<sup>s</sup><sub>p</sub> chain. Implications for molecular mimicry models of autoimmune disease. *Eur J Immunol* 21:2063-67, 1991.
37. O'Sullivan, D., Arrhenius, T., Sidney, J., DelGuercio, M-F, Albertson, M., Wall, M., Oseroff, C., Southwood, S., Colon, S.M., Gaeta, C.A., Sette, A. On the interaction of promiscuous antigenic peptides with different DR alleles. Identification of common structural motifs. *J. Immunol* 147 (8):2663-2669, 1991
38. Demotz, S., Sette, A., Sakaguchi, K., Buchner, R., Appella, E., and Grey, H. M. Self peptide requirement for class II major histocompatibility complex allorecognition. *Proc Natl Acad Sci USA* 88:8730-34, 1991.
39. Sette, A., Vitiello, A., Farness, P., Furze, J., Sidney, J., Claverie, J. M., Grey, H. M., and Chesnut, R. Random association between the peptide repertoire of A2.1 class I and several different DR class II molecules. *J Immunol* 147:3893-3900, 1991.
40. Sette, A., Southwood, S., O'Sullivan, D., Gaeta, F. C. A., Sidney, J., and Grey, H. M. Effect of pH on class II-peptide interactions. *J Immunol* 148:844-851, 1992.
41. De Magistris, M. T., Alexander, J., Coggeshall, M., Altman, A., Gaeta, F. C. A., Grey, H. M., and Sette, A. Antigen analog/major histocompatibility complexes act as antagonists of the T cell receptor. *Cell* 68:625-634, 1992.
42. Ishioka, G. Y., Lamont, A. G., Thomson, D., Bulbow, N., Gaeta, F. C. A., Sette, A., and Grey, H. M. MHC interaction and T cell recognition of carbohydrates and glycopeptides. *J Immunol* 148:2446-51, 1992.
43. Guéry, J-C., Sette, A., Leighton, J., Dragomir, A., and Adorini, L. Selective mmuno-suppression by administration of major histocompatibility complex (MHC) class II-binding peptides. I. Evidence for in vivo MHC blockade preventing T cell activation. *J Exp Med* 175:1345-52, 1992.
44. Hunt, D. F., Michel, H., Dickinson, T. A., Shabanowitz, J., Cox, A. L., Sakaguchi, K., Appella, E., Grey, H. M., and Sette, A. Peptides presented to the immune system by the murine class II major histocompatibility complex molecule I-A<sup>d</sup>. *Science* 256:1817-20, 1992.
45. Wall, M., Southwood, S., Sidney, J., Oseroff, C., del Guercio, M-F., Lamont, A., Colón, S. M., Arrhenius, T., Gaeta, F. C. A., and Sette, A. High affinity for class II molecules as a necessary but not sufficient characteristic of encephalitogenic determinants. *Int Immunol* 4:773-7, 1992.
46. Powell, M. F., Grey, H., Gaeta, F., Sette, A., and Colón, S. Peptide stability in drug development: a comparison of peptide reactivity in different biological media. *J Pharm Sci* 81:731-5, 1992.
47. Boraschi, D., Ghiara, P., Scapigliati, G., Villa, L., Sette, A., and Tagliabue, A. Binding and internalization of the 163-171 fragment of human IL-1 $\beta$ . *Cytokine* 4:201-4, 1992.
48. Sidney, J., Oseroff, C., Southwood, S., Wall, M., Karr, R. W., Ishioka, G., Koning, F., and Sette, A. DRB1\*0301 molecules recognize a structural motif distinct from the one recognized by most DR $\beta$ <sub>1</sub> alleles. *J Immunol* 149:2634-40, 1992.
49. Sette, A., O'Sullivan, D., Sidney, J., Gaeta, F. C. A., Arrhenius, T., Colón, S. M., Appella, E., and Grey, H. M. Multiple amino acid substitutions as a strategy to improve class II binding capacity of peptide molecules. *J Immunol Res.* 4:56-60, 1992.
50. Sette, A., Cernan, S., Kubo, R. T., Sakaguchi, K., Appella, E., Hunt, D. F., Davis, T. A., Michel, H., Shabanowitz, J., Rudersdorf, R., Grey, H. M., and DeMars, R. Invariant chain peptides in most HLA-DR molecules of an antigen-processing mutant. *Science* 258:1801-04, 1992.
51. Alexander, J., Snoke, K., Ruppert, J., Sidney, J., Wall, M., Southwood, S., Oseroff, C., Arrhenius, T., Gaeta, F. C. A., Colón, S. M., Grey, H. M., and Sette, A. Functional consequences of engagement of the T cell receptor by low affinity ligands. *J Immunol* 150:1-7, 1993.

52. Valli, A., Sette, A., Kappos, L., Oseroff, C., Sidney, J., Miescher, G., Hochberger, M., Albert, E. D., and Adorini, L. Binding of myelin basic protein peptides to human histocompatibility leukocyte antigen class II molecules and their recognition by T cells from multiple sclerosis patients. *J Clin Invest* 91:616-628, 1993.
53. Ruppert, J., Alexander, J., Snoke, K., Coggeshall, M., Herbert, E., McKenzie, D., Grey, H. M., and Sette, A. Effect of T-cell receptor antagonism on interaction between T cells and antigen-presenting cells and on T-cell signaling events. *Proc Natl Acad Sci USA* 90:2671-75, 1993.
54. Ostrov, D., Krieger, J., Sidney, J., Sette, A., and Concannon, P. T cell receptor antagonism mediated by interaction between T cell receptor junctional residues and peptide antigen analogues. *J Immunol* 150:4277-83, 1993.
55. Sette, A., Sidney, J., Gaeta, F. C. A., Appella, E., Colón, S. M., del Guercio, M-F., Guéry, J-C., and Adorini, L. MHC class II molecules bind indiscriminately self and non-self peptide homologs: effect on the immunogenicity of non-self peptides. *Int Immunol* 5:631-8, 1993.
56. Ruppert, J., Sidney, J., Celis, E., Kubo, R. T., Grey, H. M., and Sette, A. Prominent role of secondary anchor residues in peptide binding to HLA-A2.1 molecules. *Cell* 74:929-937, 1993.
57. Sette, A., Sidney, J., Oseroff, C., del Guercio, M-F., Southwood, S., Arrhenius, T., Powell, M. F., Colón, S. M., Gaeta, F. C. A., and Grey, H. M. HLA DR4w4-binding motifs illustrate the biochemical basis of degeneracy and specificity in peptide-DR interactions. *J Immunol* 151:3163-70, 1993.
58. Powell, M. F., Stewart, T., Otvos, Jr., L., Urge, L., Gaeta, F. C. A., Sette, A., Arrhenius, T., Thomson, D., Soda, K., and Colón, S. M. Peptide stability in drug development. II. Effect of single amino acid substitution and glycosylation on peptide reactivity in human serum. *Pharma Res* 10:1268-73, 1993.
59. Serra, H. M., Crimi, C., Sette, A., and Celis, E. Fine restriction analysis and inhibition of antigen recognition in HLA-DQ-restricted T-cells by major histocompatibility complex blockers and T cell receptor antagonists. *Eur J Immunol* 23:2967-71, 1993.
60. Snoke, K., Alexander, J., Franco, A., Smith, L., Brawley, J. V., Concannon, P., Grey, H. M., Sette, A., and Wentworth, P. The inhibition of different T cell lines specific for the same antigen with TCR antagonist peptides. *J Immunol* 151:6815-21, 1993.
61. Wucherpfennig, K. W., Sette, A., Southwood, S., Oseroff, C., Matsui, M., Strominger, J. L., and Hafler, D. A. Structural requirements for binding of an immunodominant myelin basic protein peptide to DR2 isotypes and for its recognition by human T cell clones. *J Exp Med* 179:279-90, 1994.
62. Alexander, J., Ruppert, J., Snoke, K., and Sette, A. TCR antagonism and T cell tolerance can be independently induced in a DR restricted, HA specific T cell clone. *Int Immunol* 6:363-7, 1994.
63. Celis, E., Tsai, V., Crimi, C., DeMars, R., Wentworth, P. A., Chesnut, R. W., Grey, H. M., Sette, A., and Serra, H. M. Induction of anti-tumor cytotoxic T lymphocytes in normal humans using primary cultures and synthetic peptide epitopes. *Proc Natl Acad Sci USA* 91:2105-9, 1994.
64. Chen, Y., Sidney, J., Southwood, S., Cox, A. L., Sakaguchi, K., Henderson, R. A., Appella, E., Hunt, D. F., Sette, A., and Engelhard, V. H. Naturally processed peptides longer than nine amino acid residues bind to the class I MHC molecule HLA-A2.1 with high affinity and in different conformations. *J Immunol* 152:2874-81, 1994.
65. Franco, A., Appella, E., Kagnoff, M. F., Chowers, Y., Sakaguchi, K., Grey, H. M., and Sette, A. Peripheral T cell response to A-gliadin in celiac disease: Differential processing and presentation capacities of Epstein-Barr-transformed B cells and fibroblasts. *Clin Immunol. Immunopathol.* 71:75-81, 1994.
66. Kast, W. M., Brandt, R. M. P., Sidney, J., Drijfhout, J-W., Kubo, R. T., Grey, H. M., Melief, C. J. M., and Sette, A. The role of HLA-A motifs in identification of potential CTL epitopes in human papillomavirus type 16 E6 and E7 proteins. *J Immunol* 152:3904-12, 1994.
67. Kubo, R. T., Sette, A., Grey, H. M., Appella, E., Sakaguchi, K., Zhu, N-Z., Arnott, D., Sherman, H., Shabonowitz, J., Michel, H., Bodnar, W. M., Davis, T. A., and Hunt, D. F. Definition of specific peptide motifs for four major HLA-A alleles. *J Immunol* 152:3913-24, 1994.

68. Ishioka, G. Y., Adorini, L., Guéry, J.-C., Gaeta, F. C. A., LaFond, R., Alexander, J., Powell, M. F., Sette, A., and Grey, H. M. Failure to demonstrate long-lived MHC saturation both in vitro and in vivo: Implications for therapeutic potential of MHC-blocking peptides. *J Immunol* 152:4310-19, 1994.
69. Sidney, J., Oseroff, C., del Guercio, M-F., Southwood, S., Krieger, J. I., Ishioka, G. Y., Sakaguchi, K., Appella, E., and Sette, A. Definition of a DQ3.1 specific binding motif. *J Immunol* 152:4516-25, 1994.
70. Wall, K. A., Hu, J-Y., Currier, P., Southwood, S., Sette, A., and Infante, A. J. A disease-related epitope of *Torpedo* acetylcholine receptor: Residues involved in I-A<sup>b</sup> binding, self-nonsel discrimination, and TCR antagonism. *J Immunol* 152:4526-36, 1994.
71. Page, D. M., Alexander, J., Snoke, K., Appella, E., Sette, A., Hedrick, S. M., and Grey, H. M. Negative selection of CD4<sup>+</sup>CD8<sup>+</sup> thymocytes by T cell receptor peptide antagonists. *Proc Natl Acad Sci USA* 91:4057-61, 1994.
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System	Sequence	Organism	Source	Reference
Infectious disease antigens	GLLGWSPQA	HBV	Env 62	Bertoni et al., J Clin Invest 100: 503, 1997
	FLLAQFTSA	HBV	Pol 503	Livingston et al., unpublished observations
	YMDDVVLGA	HBV	Pol 538	Rehermann et al., J Clin Invest 97: 1655, 1996
	LLFLLLADA	HCV	NS1/E2 726	Scognamiglio et al., J Immunol 162: 6681, 1999
	VLVGGVLAA	HCV	NS4 1666	Scognamiglio et al., J Immunol 162: 6681, 1999
	WMNRLIAFA	HCV	NS4 1920	Scognamiglio et al., J Immunol 162: 6681, 1999
	LTFGWCFKLV	HIV	Nef 62	Altfeld et al., J Virol 75: 1301, 2001
	LVGPTPVNI	HIV	Pol 100	Altfeld et al., J Virol 75: 1301, 2001
	YTAFTIPSI	HIV	Pol 83	Altfeld et al., J Virol 75: 1301, 2001
	KLVGKLNWA	HIV	Pol 87	
	RILQQLFI	HIV	Vpr 72	Altfeld et al., J Virol 75: 1301, 2001
	AIIRILQQL	HIV	Vpr 76	Altfeld et al., J Virol 75: 1301, 2001
	MINAYLDKL	P. falciparum	STARP	Gonzalez et al., Parasite Immunol 22: 501, 2000
	KILSVFFLA	P. falciparum	EXP1 2	Doolan et al., Immunity 7: 97, 1997
				Doolan et al., Immunity 7: 97, 1997; Sette et al., unpublished observations <sup>a</sup>
	LIFFDLFLV	P. falciparum	SSP2 15	
	FVNHDFTVV	T. cruzi	ASP-1 508	Wizel et al., J Clin Invest 102: 1062, 1998
	IAGGVMAVV	T. cruzi	ASP-1 71	Wizel et al., J Clin Invest 102: 1062, 1998
	WVFPEISPV	T. cruzi	ASP-2 302	Wizel et al., J Clin Invest 102: 1062, 1998
	FVNHRFTLV	T. cruzi	ASP-2 551	Wizel et al., J Clin Invest 102: 1062, 1998
	FVDYNFTIV	T. cruzi	TSA-1 514	Wizel et al., J Clin Invest 102: 1062, 1998
Tumor associated antigens	TIHDIIECV	HPV	E6 29	Ressing et al., J Immunol 154: 5934, 1995
	FAFKDLFVV	HPV	E6 47	Castellanos et al., Gynec Oncol 82: 77, 2001
	FAFRDLCIV	HPV	E6 52	Ressing et al., J Immunol 154: 5934, 1995
	KATLQDIVLHL	HPV	E7 5	Castellanos et al., Crit Rev Oncol/Hemat 39: 133, 2001
	GTLGIVCPI	HPV	E7 85	Wentworth et al., Eur J Immunol 26: 97, 1996
	KTWGQYWQV	Human	gp100 154	Kawakami et al., J Immunol 154: 3961, 1995
	ITDQVPFSV	Human	gp100 209	Kawakami et al., J Immunol 154: 3961, 1995
	YLEPGPVTA	Human	gp100 280	Kawakami et al., J Immunol 154: 3961, 1995
	KIFGSLAFL	Human	HER2 369	Kawashima et al., Human Immunol 59: 1, 1998
	KIFGSLAFL	Human	Her-2/neu 369	Lustgarten et al., Human Immunol 52: 109, 1997
	KIWEELSML	Human	MAGE2 220	Fikes et al., unpublished observations
	KVAELVHFL	Human	MAGE3 112	Kawashima et al., Human Immunol 59: 1, 1998
	AAGIGILTV	Human	MART1 27	Rivoltini et al., J Immunol 154: 2257, 1995
	AARAVFLAL	Human	Tyrosinase	Boel et al., Immunity 2: 167, 1995

a. Epitope described in the literature nested the peptide indicated.

## EXHIBIT B

Serial No. 08/349,177  
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